

of the Examiner's comments, and has also corrected spelling and typographical errors throughout the specification. No new matter has been added.

Claims 2-5, 11 and 14 have been rejected under 35 USC §112, second paragraph, as being indefinite for the specified reasons.

These claims have been amended in consideration of the Examiner's comments and suggestions to obviate the bases for rejection. It is therefore submitted that these claims as amended now define the invention with sufficient particularity and distinctiveness to be patentable to applicant.

Claims 1-16 have been rejected under 35 USC §103(a) as being unpatentable over Scwemberger et al. '292. This rejection is respectfully traversed.

The independent claim 1 specifically recites "a second lumen for housing a surgical instrument therein for performing surgical procedures on tissue viewed through the transparent tip, the second lumen having an open distal end positioned intermediate the proximal and distal ends of the first lumen". In addition, the dependent claims are further restricted to "the second lumen is configured to house surgical scissors therein", and "the second lumen is configured to house therein blades of surgical scissors curved in a predetermined angle", and "a flexible hood having an open proximal end coupled to the distal end of the second lumen and operable in a transition orientation responsive to the surgical instrument being retracted within the second lumen, and in an expanded orientation in response to

extension therethrough of a surgical instrument projecting forward from the second lumen". Also, the dependent claims are further restricted to "cannula includes a transition contour near the location therealong at which the first lumen extends beyond the second lumen to reduce axial force required to advance the cannula through tissue", and "the cannula comprises another lumen for housing therein a dissection loop instrument including one or more stems extending through other lumen or lumens and including a curved element attached to a distal end of the stem or stems".

These aspects of the claimed invention facilitate tissue dissection and remote surgical procedures in dissected tissue as more fully described in the specification, for example, at pages 6-10, line 20.

These aspects of the claimed invention are not shown or suggested by the cited reference. Specifically Scwemberger et al. '292 is understood to have only the one lumen through the cannula that receives an endoscope, and does not have an additional or auxiliary lumen extending through the cannula through which to manipulate a surgical instrument, in the manner as claimed by applicant. This reference is thus deficient of disclosure of an additional or auxiliary lumen, as claimed by applicant, through which a tissue transector such as surgical scissors that can be manipulated separately from the tip. At best, this reference discloses tissue-cutting blades 15, 16 integrally formed with a transparent tip, and exhibits

no need for an additional tissue cutter for the operational purposes of the instrument, as described. This reference is therefore deficient of disclosures of the elements explicitly recited in applicant's claims, and fails to establish even a *prima facie* basis from which a proper determination of obviousness can be made. And, the Examiner has not cited pertinent prior art in support of the argument regarding well known in the art to provide a flexible hood in a structure as claimed by applicant. It is therefore respectfully submitted that claims 1-16 as amended are now patentably distinguishable over the cited art.

Reconsideration and allowance of claims 1-16 are solicited.

Respectfully submitted,  
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ATTACHMENT: APPLICATION REVISIONS



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### APPLICATION REVISIONS

#### In the Specification:

Replace last paragraph on page 7 to top of page 8, as follows:

--In a preferred embodiment, the endoscopic dissection shaft 112 extends through the endoscopic lumen 124 [extends through the endoscopic dissection shaft 112] to the transparent tapered tip 104. An endoscope 132 within the endoscopic lumen 124 provides endoscopic visualization through the transparent tapered tip 104 of tissue being dissected along the length of the vessel being harvested. In the preferred embodiment, the endoscope 132 is sealed within the endoscopic lumen 124 by the transparent tapered tip 104 to prevent smudging of the endoscope by surrounding blood or tissue. Since a working lumen 120 extends through the cannula and houses the surgical tools, the transparent tapered tip 104 which is positioned on the endoscopic dissection shaft 112 does not have to be removed from the cannula 100 to accommodate other endoscopic instruments during a surgical procedure. Thus, cautery scissors may be manipulated through the working lumen 120 to cauterize and transect tributaries of side branches of the vessel being harvested while the endoscope 132 remains enclosed within the transparent tapered tip during vessel harvesting, and thus remains unaffected by the

presence of blood and tissue in the surgical field. Further, the transparent tip 104 may be placed against the main trunk of the vessel being harvested to displace the blood therein and promote visualization of the vessel in contrasting color. To further reduce the force required to advance the cannula 100 during blunt tissue dissection, the face 152 of the main body 128 at the point at which the endoscopic dissection shaft 112 extends is contoured, and such contoured face 152 allows tissue to slide easily past the cannula 100 with a minimum of force exerted against the tissue.--

Replace last paragraph on page 10 through page 11 to the top of page 12, as follows:

--Figures 3a and 3b illustrates a use of the cannula 100 to transect a tributary or side branch 308 of a vein 300. Figure 4 is a flow chart illustrating a method of using the cannula 100, and will be described in conjunction with Figures 3a and 3b. Initially, a conventional sliding gas-sealing port such as the Blunt Tip Trocar (BTT, Guidant Corporation, Cardiac and Vascular Surgery, Menlo Park, CA) is backloaded onto the cannula 100. Then, the skin overlying the vessel 300 is incised 400 with approximately an 1.5-2 cm incision. The vessel 300 is isolated, and the transparent tapered tip 104 is placed 404 on the adventitial surface of the vessel 300 and advanced along the vessel 300 a sufficient length to allow insertion of the port into the incision. The port seals the incision and gas insufflation is

initiated 408 to create a working tunnel or anatomical space adjacent the vessel being harvested. Under insufflation and endoscopic visualization, the cannula 100 is advanced 412 along the vessel 300. The transparent tapered tip 104 provides initial blunt tissue dissection and the main body 128 of the cannula 100 provides secondary tissue dilation. The tapered flexible hood 116 is collapsed along the side of the endoscopic dissection shaft 112 to provide a low profile for the cannula 100 as it is maneuvered within the surgical site. A surgical tool 156 such as bipolar scissors may be extended 416 from the cannula 100 through the flexible hood 156 to perform an ancillary surgical procedure. For saphenous vein harvesting procedures, the cannula 100 is advanced [arteriorly] anteriorly and posteriorly along the length of the vessel 300, and on either side of each tributary or side branch. Upon encountering a side branch 308, as shown in Figure 3a, the transparent tapered tip 104 is advanced to the apex 304 between the main trunk of the vein 300 and the side branch 308. The center of the tapered tip 104 is placed against the main trunk of the vessel. As shown in Figure 3b the scissors 156 are advanced 416, and the cannula 100 is rotated if necessary to direct the scissors blades toward the side branch 308 for cauterization and transection.

Alternatively, a bisector of hook-like configuration may be used. In this embodiment, the hook-like bisector is positioned in the working lumen 120 and

can be extended from the cannula 100 to loop around the side branch 308 to transect and cauterize the side branch 308 upon retraction into the lumen 120.--

Replace paragraph from line 3 to line 16 on page 12, as follows:

--In another embodiment, as shown in Figure 5, a cradled retractor 504 configured with a hook-like, U-shaped cradle 500, is positioned within the working lumen 120. The cradled retractor 504 is preferably a retractor such as described in U.S. Patent 5,895,353. However, other cradled retractors sized to fit within the working lumen 120 could also be used in accordance with the present invention. In this embodiment, after the side branches have been transected and cauterized, the bipolar scissors or bisector or other surgical [site and the surgical] tool is removed from the working lumen 120. Then, the cradled retractor 504 is placed within the lumen 120 and is extended from the distal end thereof from beneath the hood 116 with the cradle 500 placed over the proximal end of the vein to be harvested. The cradle 500 is then passed along the length of the vein to ensure that all of the side branches have been transected. If a side branch is encountered, bipolar scissors or bisector is reinserted into the lumen 120 in the cannula 100, and is extended to transect the side branch. Replacement of surgical tools within the working lumen 120 may be accomplished with the cannula 100 in position within the surgical site, or with the cannula removed from the surgical site through the gas-sealing port.--

In the Claims:

Rewrite claims 2-5, 11 and 14 in amended form, as follows:

2. (Amended) The apparatus of claim 1 wherein the second lumen [houses] is configured to house surgical scissors therein.
3. (Amended) The apparatus of claim 2 wherein the second lumen is configured to house therein blades of [the] surgical scissors [are] curved in a predetermined angle.
4. (Amended) The apparatus of claim 3 wherein the second lumen is keyed to maintain tips of [the] surgical scissors housed within the second lumen in a predetermined rotational orientation with respect to the transparent tip.
5. (Amended) The apparatus of claim 3 wherein the second lumen is configured to house therein blades of [the] surgical scissors that curve toward the transparent tip to provide endoscopic visualization of the blades upon extension from the second lumen.
11. (Amended) The apparatus of claim 1 [wherein the surgical tool is a] comprising a tissue bisector as a surgical instrument disposed within the second lumen.



14. (Amended) The apparatus of claim 1 [wherein the surgical tool is]  
comprising a retractor having a curved distal end for cradling a vein as a surgical  
instrument disposed within the second lumen.